OMEX II Upwelling Index Data Set

Introduction

A long time series of upwelling indices for the Vigo region (42°N, 9°W) was obtained from the US National Oceanic and Atmospheric Administration (NOAA/NMFS/SWFSC Pacific Fisheries Environmental Laboratory, Pacific Grove, California 93950-2097). The source data were the FNMOC synoptic pressure fields derived from ship, buoy and model data. From these, the geostrophic wind vectors were calculated and then converted into estimates of Ekman offshore transport using Bakun's method (Schwing et al., 1996).

Data File Location and Description

The upwelling index data set may be found in the 'Upwelling Index' directory. There are four data files:

upw_42n9w_monthly.txt Contains the complete suite of parameters computed monthly for 42°N, 9°W. The data from January 1981 until November 1996 were derived from 2.5-degree spherical grid pressure fields (73x144 grid points). The data between December 1996 and November 1999 were derived from 1-degree spherical grid fields (181x360 grid points). The data are stored in a simple ASCII format and are preceded by a comprehensive format description. Note that the format description is repeated in the data file at the point where the grid resolution changes. Null values are filled with asterisks.

upw_42n9w_6h.txt This simple ASCII file contains the six-hourly offshore Ekman transport (upwelling index) and the along shore Ekman transport for each day between 1st January 1993 and 30th November 1999. Each line contains 9 columns. The first column is the date (yymmdd) and time (always 00) of the first data value (I8). This is followed by the offshore Ekman transport values for 0000, 0600, 1200 and 1800 GMT (4I5) and the corresponding along shore Ekman transport values for the same times (4I5). Missing values are denoted by -9999. The transport units are metric tonnes/sec/100m of coast.

upw_42n9w_6h_tab.txt This simple ASCII file contains a reformatted version of a subset of the data held in upw_42n9w_6h.txt. The offshore Eckman transport (upwelling index) values are presented one per record, preceded by the date (yyyy mm dd) and date/time (yyyyjjj.ff, where jjj is the day number in year and ff is the day fraction).

upw_42n9w_daily.txt This simple ASCII file contains the data from upw_42n9w_6h_tab.txt having each daily group of four 6-hourly offshore indices averaged to give a daily upwelling index. The format is similar to the 6-hourly file, with dates in two formats (yyyy mm dd yyyyjjj) followed by the upwelling index value.

Reference

Schwing F.B., O'Farrell M., Steger J. and Baltz K., 1996. Coastal upwelling indices, West Coast of North America 1946-1995, *NOAA Technical Memorandum* NMFS-SWFSC-231, 207 pp.